

in a separate inside packaging. Sufficient cushioning materials must be used to ensure that all inside packagings are securely packed in the outside packaging.

(c) The following explosives may not be packed together with other Class 1 explosives: UN 0029, UN 0030, UN 0073, UN 0106, UN 0107, UN 0255, UN 0257, UN 0267, UN 0350, UN 0360, UN 0361, UN 0364, UN 0365, UN 0366, UN 0367, UN 0408, UN 0409, UN 0410, UN 0455, UN 0456, and UN 0500. These explosives may be mixed-packed with each other in accordance with the compatibility requirements prescribed in paragraph (e) of this section.

(d) Division 1.1 and 1.2 explosives may not be packed with the following explosives: UN 0333, UN 0334, UN 0335, UN 0336, and UN 0337.

(e) Except as prescribed in paragraphs (c) and (d) of this section, different explosives may be packed in one outside packaging in accordance with the following compatibility requirements:

(1) Explosives of the same compatibility group and same division number may be packed together.

(2) Explosives of the same compatibility group or authorized combination of compatibility group but different division number may be packed together, provided that the whole package is treated as though its entire contents were comprised of the lower division number. For example, a mixed package of Division 1.2 explosives and Division 1.4 explosives, compatibility group D, must be treated as 1.2D explosives. However, when 1.5D explosives are packed together with 1.2D explosives, the whole package must be treated as 1.1D explosives.

(3) Explosives of compatibility group S may be packaged together with explosives of any other compatibility group except A or L, and the combined package may be treated as belonging to any of the packaged compatibility groups except S.

(4) Explosives of compatibility group L shall only be packed with an identical explosive.

(5) Explosives articles of compatibility groups C, D, or E may be packed together and the entire package shall

be treated as belonging to compatibility group E.

(6) Explosives articles of compatibility groups C, D, E, or N may be packed together and the entire package shall be treated as belonging to compatibility group D.

(7) Explosives substances of compatibility groups C and D may be packaged together and the entire package shall be treated as belonging to compatibility group D.

(8) Explosive articles of compatibility group G, except for fireworks and articles requiring special packaging, may be packaged together with explosive articles of compatibility groups C, D or E and the combined package shall be treated as belonging to compatibility group E.

[Amdt. 173-224, 55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 65 FR 50461, Aug. 18, 2000; 66 FR 33429, June 21, 2001; 66 FR 45381, Aug. 28, 2001; 69 FR 54046, Sept. 7, 2004; 73 FR 4717, Jan. 28 2008]

#### § 173.62 Specific packaging requirements for explosives.

(a) Except as provided in §173.7 of this subchapter, when the §172.101 Table specifies that an explosive must be packaged in accordance with this section, only packagings which conform to the provisions of paragraphs (b) and (c) of this section or §173.7(e) of this subchapter and the applicable requirements in §§173.60 and 173.61 may be used unless otherwise approved by the Associate Administrator.

(b) *Explosives Table.* The Explosives Table specifies the Packing Instructions assigned to each explosive. Explosives are identified in the first column in numerical sequence by their identification number (ID #), which is listed in column 4 of the §172.101 table, of this subchapter. The second column of the Explosives Table specifies the Packing Instruction (PI) which must be used for packaging the explosive. The Explosives Packing Method Table in paragraph (c) of this section defines the methods of packaging. The Packing Instructions are identified using a 3 digit designation. The Packing Instruction prefixed by the letters "US" is particular to the United States and not found in applicable international regulations.

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EXPLOSIVES TABLE

ID#	PI
UN0004 .....	112
UN0005 .....	130
UN0006 .....	130
UN0007 .....	130
UN0009 .....	130
UN0010 .....	130
UN0012 .....	130
UN0014 .....	130
UN0015 .....	130
UN0016 .....	130
UN0018 .....	130
UN0019 .....	130
UN0020 .....	101
UN0021 .....	101
UN0027 .....	113
UN0028 .....	113
UN0029 .....	131
UN0030 .....	131
UN0033 .....	130
UN0034 .....	130
UN0035 .....	130
UN0037 .....	130
UN0038 .....	130
UN0039 .....	130
UN0042 .....	132
UN0043 .....	133
UN0044 .....	133
UN0048 .....	130
UN0049 .....	135
UN0050 .....	135
UN0054 .....	135
UN0055 .....	136
UN0056 .....	130
UN0059 .....	137
UN0060 .....	132
UN0065 .....	139
UN0066 .....	140
UN0070 .....	134
UN0072 .....	112(a)
UN0073 .....	133
UN0074 .....	110(a) or 110(b)
UN0075 .....	115
UN0076 .....	112
UN0077 .....	114(a) or 114(b)
UN0078 .....	112
UN0079 .....	112(b) or 112(c)
UN0081 .....	116
UN0082 .....	116 or 117
UN0083 .....	116
UN0084 .....	116
UN0092 .....	135
UN0093 .....	135
UN0094 .....	113
UN0099 .....	134
UN0101 .....	140
UN0102 .....	139
UN0103 .....	140
UN0104 .....	139
UN0105 .....	140
UN0106 .....	141
UN0107 .....	141
UN0110 .....	141
UN0113 .....	110(a) or 110(b)
UN0114 .....	110(a) or 110(b)
UN0118 .....	112
UN0121 .....	142
UN0124 .....	US1
UN0129 .....	110(a) or 110(b)
UN0130 .....	110(a) or 110(b)
UN0131 .....	142
UN0132 .....	114(b)
UN0133 .....	112(a)

EXPLOSIVES TABLE—Continued

ID#	PI
UN0135 .....	110(a) or 110(b)
UN0136 .....	130
UN0137 .....	130
UN0138 .....	130
UN0143 .....	115
UN0144 .....	115
UN0146 .....	112
UN0147 .....	112(b)
UN0150 .....	112(a) or 112(b)
UN0151 .....	112
UN0153 .....	112(b) or 112(c)
UN0154 .....	112
UN0155 .....	112(b) or 112(c)
UN0159 .....	111
UN0160 .....	114(b)
UN0161 .....	114(b)
UN0167 .....	130
UN0168 .....	130
UN0169 .....	130
UN0171 .....	130
UN0173 .....	134
UN0174 .....	134
UN0180 .....	130
UN0181 .....	130
UN0182 .....	130
UN0183 .....	130
UN0186 .....	130
UN0190 .....	101
UN0191 .....	135
UN0192 .....	135
UN0193 .....	135
UN0194 .....	135
UN0195 .....	135
UN0196 .....	135
UN0197 .....	135
UN0204 .....	134
UN0207 .....	112(b) or 112(c)
UN0208 .....	112(b) or 112(c)
UN0209 .....	112
UN0212 .....	133
UN0213 .....	112(b) or 112(c)
UN0214 .....	112
UN0215 .....	112
UN0216 .....	112(b) or 112(c)
UN0217 .....	112(b) or 112(c)
UN0218 .....	112(b) or 112(c)
UN0219 .....	112
UN0220 .....	112
UN0221 .....	130
UN0222 .....	112(b) or 112(c)
UN0224 .....	110(a) or 110(b)
UN0225 .....	133
UN0226 .....	112(a)
UN0234 .....	114(a) or 114(b)
UN0235 .....	114(a) or 114(b)
UN0236 .....	114(a) or 114(b)
UN0237 .....	138
UN0238 .....	130
UN0240 .....	130
UN0241 .....	116 or 117
UN0242 .....	130
UN0243 .....	130
UN0244 .....	130
UN0245 .....	130
UN0246 .....	130
UN0247 .....	101
UN0248 .....	144
UN0249 .....	144
UN0250 .....	101
UN0254 .....	130
UN0255 .....	131
UN0257 .....	141

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EXPLOSIVES TABLE—Continued

ID#	PI
UN0266 .....	112
UN0267 .....	131
UN0268 .....	133
UN0271 .....	143
UN0272 .....	143
UN0275 .....	134
UN0276 .....	134
UN0277 .....	134
UN0278 .....	134
UN0279 .....	130
UN0280 .....	130
UN0281 .....	130
UN0282 .....	112
UN0283 .....	132
UN0284 .....	141
UN0285 .....	141
UN0286 .....	130
UN0287 .....	130
UN0288 .....	138
UN0289 .....	139
UN0290 .....	139
UN0291 .....	130
UN0292 .....	141
UN0293 .....	141
UN0294 .....	130
UN0295 .....	130
UN0296 .....	134
UN0297 .....	130
UN0299 .....	130
UN0300 .....	130
UN0301 .....	130
UN0303 .....	130
UN0305 .....	113
UN0306 .....	133
UN0312 .....	135
UN0313 .....	135
UN0314 .....	142
UN0315 .....	142
UN0316 .....	141
UN0317 .....	141
UN0318 .....	141
UN0319 .....	133
UN0320 .....	133
UN0321 .....	130
UN0322 .....	101
UN0323 .....	134
UN0324 .....	130
UN0325 .....	142
UN0326 .....	130
UN0327 .....	130
UN0328 .....	130
UN0329 .....	130
UN0330 .....	130
UN0331 .....	116 or 117
UN0332 .....	116 or 117
UN0333 .....	135
UN0334 .....	135
UN0335 .....	135
UN0336 .....	135
UN0337 .....	135
UN0338 .....	130
UN0339 .....	130
UN0340 .....	112(a) or 112(b)
UN0341 .....	112(b)
UN0342 .....	114(a)
UN0343 .....	111
UN0344 .....	130
UN0345 .....	130
UN0346 .....	130
UN0347 .....	130
UN0348 .....	130
UN0349 .....	101

EXPLOSIVES TABLE—Continued

ID#	PI
UN0350 .....	101
UN0351 .....	101
UN0352 .....	101
UN0353 .....	101
UN0354 .....	101
UN0355 .....	101
UN0356 .....	101
UN0357 .....	101
UN0358 .....	101
UN0359 .....	101
UN0360 .....	131
UN0361 .....	131
UN0362 .....	130
UN0363 .....	130
UN0364 .....	133
UN0365 .....	133
UN0366 .....	133
UN0367 .....	141
UN0368 .....	141
UN0369 .....	130
UN0370 .....	130
UN0371 .....	130
UN0372 .....	141
UN0373 .....	135
UN0374 .....	134
UN0375 .....	134
UN0376 .....	133
UN0377 .....	133
UN0378 .....	133
UN0379 .....	136
UN0380 .....	101
UN0381 .....	134
UN0382 .....	101
UN0383 .....	101
UN0384 .....	101
UN0385 .....	112(b) or 112(c)
UN0386 .....	112(b) or 112(c)
UN0387 .....	112(b) or 112(c)
UN0388 .....	112(b) or 112(c)
UN0389 .....	112(b) or 112(c)
UN0390 .....	112(b) or 112(c)
UN0391 .....	112(a)
UN0392 .....	112(b) or 112(c)
UN0393 .....	112(b)
UN0394 .....	112(a)
UN0395 .....	101
UN0396 .....	101
UN0397 .....	101
UN0398 .....	101
UN0399 .....	101
UN0400 .....	101
UN0401 .....	112
UN0402 .....	112(b) or 112(c)
UN0403 .....	135
UN0404 .....	135
UN0405 .....	135
UN0406 .....	114(b)
UN0407 .....	114(b)
UN0408 .....	141
UN0409 .....	141
UN0410 .....	141
UN0411 .....	112(b) or 112(c)
UN0412 .....	130
UN0413 .....	130
UN0414 .....	130
UN0415 .....	143
UN0417 .....	130
UN0418 .....	135
UN0419 .....	135
UN0420 .....	135
UN0421 .....	135
UN0424 .....	130

EXPLOSIVES TABLE—Continued

ID#	PI
UN0425 .....	130
UN0426 .....	130
UN0427 .....	130
UN0428 .....	135
UN0429 .....	135
UN0430 .....	135
UN0431 .....	135
UN0432 .....	135
UN0433 .....	111
UN0434 .....	130
UN0435 .....	130
UN0436 .....	130
UN0437 .....	130
UN0438 .....	130
UN0439 .....	137
UN0440 .....	137
UN0441 .....	137
UN0442 .....	137
UN0443 .....	137
UN0444 .....	137
UN0445 .....	137
UN0446 .....	136
UN0447 .....	136
UN0448 .....	114(b)
UN0449 .....	101
UN0450 .....	101
UN0451 .....	130
UN0452 .....	141
UN0453 .....	130
UN0454 .....	142
UN0455 .....	131
UN0456 .....	131
UN0457 .....	130
UN0458 .....	130
UN0459 .....	130
UN0460 .....	130
UN0461 .....	101
UN0462 .....	101
UN0463 .....	101
UN0464 .....	101
UN0465 .....	101
UN0466 .....	101
UN0467 .....	101
UN0468 .....	101
UN0469 .....	101
UN0470 .....	101
UN0471 .....	101
UN0472 .....	101
UN0473 .....	101
UN0474 .....	101
UN0475 .....	101
UN0476 .....	101
UN0477 .....	101
UN0478 .....	101
UN0479 .....	101
UN0480 .....	101
UN0481 .....	101
UN0482 .....	101
UN0483 .....	112(b) or 112(c)
UN0484 .....	112(b) or 112(c)
UN0486 .....	101
UN0487 .....	135
UN0488 .....	130
UN0489 .....	112(b) or 112(c)
UN0490 .....	112(b) or 112(c)
UN0491 .....	143
UN0492 .....	135
UN0493 .....	135
UN0494 .....	US1
UN0495 .....	115

EXPLOSIVES TABLE—Continued

ID#	PI
UN0496 .....	112(b) or 112(c)
UN0497 .....	115
UN0498 .....	114(b)
UN0499 .....	114(b)
UN0500 .....	131
UN0502 .....	130
UN0503 .....	135
UN0504 .....	112(c)
UN0505 .....	135
UN0506 .....	135
UN0507 .....	135
UN0508 .....	114(b)
UN0509 .....	114(b)
NA0124 .....	US1
NA0276 .....	134
NA0323 .....	134
NA0331 .....	116 or 117
NA0337 .....	135
NA0349 .....	133
NA0494 .....	US1

(c) Explosives must be packaged in accordance with the following table:

(1) The first column lists, in alphanumeric sequence, the packing methods prescribed for explosives in the Explosives Table of paragraph (b) of this section.

(2) The second column specifies the inner packagings that are required. If inner packagings are not required, a notation of “Not necessary” appears in the column. The term “Not necessary” means that a suitable inner packaging may be used but is not required.

(3) The third column specifies the intermediate packagings that are required. If intermediate packagings are not required, a notation of “Not necessary” appears in the column. The term “Not necessary” means that a suitable intermediate packaging may be used but is not required.

(4) The fourth column specifies the outer packagings which are required. If inner packagings and/or intermediate packagings are specified in the second and third columns, then the packaging specified in the fourth column must be used as the outer packaging of a combination packaging; otherwise it may be used as a single packaging.

(5) Packing Instruction 101 may be used for any explosive substance or article if an equivalent level of safety is shown to be maintained subject to the approval of the Associate Administrator.

TABLE OF PACKING METHODS

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
101 .....	This Packing Instruction may be used as an alternative to a specifically assigned packing method with the approval of the Associate Administrator prior to transportation. When this packing instruction is used, the following must be marked on the shipping documents: "Packaging approved by the competent authority of the United States of America (USA)".		
PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. Samples of new or existing explosive substances or articles may be transported as directed by the Associate Administrator for purposes including: testing, classification, research and development, quality control, or as a commercial sample. Explosive samples which are wetted or desensitized must be limited to 25 kg. Explosive samples which are not wetted or desensitized must be limited to 10 kg in small packages as specified by the Associate Administrator for Hazardous Materials Safety			
110(a) ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. The Intermediate packagings must be filled with water saturated material such as an anti-freeze solution or wetted cushioning 2. Outer packagings must be filled with water saturated material such as an anti-freeze solution or wetted cushioning. Outer packagings must be constructed and sealed to prevent evaporation of the wetting solution, except when 0224 is being carried dry	Bags ..... plastics ..... textile, plastic coated or lined. rubber ..... textile, rubberized .. textile .....	Bags ..... plastics ..... textile, plastic coated or lined. rubber ..... textile, rubberized .. Receptacles ..... plastics ..... metal .....	Drums. steel, removable head (1A2). plastics, removable head (1H2)
110(b) ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS For UN 0074, 0113, 0114, 0129, 0130, 0135 and 0224, the following conditions must be satisfied: a. inner packagings must not contain more than 50 g of explosive substance (quantity corresponding to dry substance); b. each inner packaging must be separated from other inner packagings by dividing partitions; and c. the outer packaging must not be partitioned with more than 25 compartments	Bags ..... rubber, conductive plastics, conductive Receptacles ..... metal ..... wood ..... rubber, conductive plastics, conductive	Dividing partitions ..... metal ..... wood ..... plastics ..... fibreboard .....	Boxes. natural wood, sift-proof wall (4C2). plywood (4D). reconstituted wood (4F).
111 ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: For UN 0159, inner packagings are not required when metal (1A2 or 1B2) or plastics (1H2) drums are used as outer packagings.	Bags ..... paper, waterproofed plastics ..... textile, rubberized .. Sheets ..... plastics ..... textile, rubberized ..	Not necessary .....	Boxes. steel (4A). aluminium (4B). natural wood, ordinary (4C1). natural wood, sift proof (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, expanded (4H1). plastics, solid (4H2). Drums steel, removable head (1A2). aluminum, removable head (1B2). plywood (1D). fibreboard (1G). plastics, removable head (1H2).
112(a) This packing instruction applies to wetted solids.	Bags .....	Bags .....	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <ol style="list-style-type: none"> <li>For UN Nos. 0004, 0076, 0078, 0154, 0219 and 0394, packagings must be lead free</li> <li>Intermediate packagings are not required if leakproof drums are used as the outer packaging</li> <li>For UN 0072 and UN 0226, intermediate packagings are not required</li> </ol>	<p>paper, multiwall, water resistant.</p> <p>plastics .....</p> <p>textile .....</p> <p>textile, rubberized ..</p> <p>woven plastics .....</p> <p>Receptacles .....</p> <p>metal .....</p> <p>plastics .....</p>	<p>plastics .....</p> <p>textile, plastic coated or lined.</p> <p>Receptacles .....</p> <p>metal .....</p> <p>plastics .....</p>	<p>steel (4A).</p> <p>aluminium (4B).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fibreboard (4G).</p> <p>plastics, expanded (4H1).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>steel, removable head (1A2).</p> <p>aluminium, removable head (1B2).</p> <p>Plywood (1D).</p> <p>fibre (1G).</p> <p>plastics, removable head (1H2).</p>
<p>112(b) This packing instruction applies to dry solids other than powders.</p> <p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <ol style="list-style-type: none"> <li>For UN 0004, 0076, 0078, 0154, 0216, 0219 and 0386, packagings must be lead free.</li> <li>For UN 0209, bags, sift-proof (5H2) are recommended for flake or prilled TNT in the dry state and a maximum net mass of 30 kg..</li> <li>For UN 0222, inner packagings are not required.</li> </ol>	<p>Bags .....</p> <p>paper, Kraft .....</p> <p>paper, multiwall, water resistant.</p> <p>plastics .....</p> <p>textile .....</p> <p>textile, rubberized plastics.</p> <p>woven plastics .....</p>	<p>Bags (for UN 0150 only).</p> <p>plastics .....</p> <p>textile, plastic coated or lined.</p>	<p>Bags.</p> <p>woven plastics sift-proof (5H2/3).</p> <p>plastics, film (5H4).</p> <p>textile, sift-proof (5L2).</p> <p>textile, water resistant (5L3).</p> <p>paper, multiwall, water resistant (5M2).</p> <p>Boxes</p> <p>steel (4A).</p> <p>aluminium (4B).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D)</p> <p>reconstituted wood (4F).</p> <p>fibreboard (4G).</p> <p>plastics, expanded (4H1).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>steel, removable head (1A2).</p> <p>aluminium, removable head (1B2).</p> <p>Plywood (1D).</p> <p>fibre (1G).</p> <p>plastics, removable head (1H2).</p>
<p>112(c) This packing instruction applies to solid dry powders.</p>	<p>Bags .....</p>	<p>Bags .....</p>	<p>Boxes.</p>

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <ol style="list-style-type: none"> <li>For UN 0004, 0076, 0078, 0154, 0216, 0219 and 0386, packagings must be lead free</li> <li>For UN 0209, bags, sift-proof (5H2) are recommended for flake or prilled TNT in the dry state. Bags must not exceed a maximum net mass of 30 kg.</li> <li>Inner packagings are not required if drums are used as the outer packaging.</li> <li>At least one of the packagings must be sift-proof</li> </ol>	<p>paper, multiwall, water resistant.</p> <p>plastics .....</p> <p>woven plastics .....</p> <p>Receptacles .....</p> <p>fibreboard .....</p> <p>metal .....</p> <p>plastics .....</p> <p>wood .....</p>	<p>paper, multiwall, water resistant with inner lining.</p> <p>plastics .....</p> <p>Receptacles .....</p> <p>metal .....</p> <p>plastics .....</p>	<p>steel (4A).</p> <p>natural wood, aluminum (4B).</p> <p>ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fibreboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>plastics, removable head (1H2).</p> <p>steel, removable head (1A2).</p> <p>aluminium, removable head (1B2).</p> <p>Plywood (1D).</p> <p>fibre (1G).</p> <p>Boxes.</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift-proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fibreboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>plastics, removable head (1H2).</p> <p>steel, removable head (1A2).</p> <p>aluminium, removable head (1B2).</p> <p>Plywood (1D).</p> <p>fibre (1G).</p>
<p>113 ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <ol style="list-style-type: none"> <li>For UN 0094 and UN 0305, no more than 50 g of substance must be packed in an inner packaging</li> <li>For UN 0027, inner packagings are not necessary when drums are used as the outer packaging</li> <li>At least one of the packagings must be sift-proof</li> <li>Sheets must only be used for UN 0028</li> </ol>	<p>Bags .....</p> <p>paper .....</p> <p>plastics .....</p> <p>textile, rubberized ..</p> <p>Receptacles .....</p> <p>fibreboard .....</p> <p>metal .....</p> <p>plastics .....</p> <p>wood .....</p> <p>Sheets .....</p> <p>paper, kraft .....</p> <p>paper, waxed .....</p>	<p>Not necessary .....</p>	<p>Boxes.</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift-proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fibreboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>plastics, removable head (1H2).</p> <p>steel, removable head (1A2).</p> <p>aluminium, removable head (1B2).</p> <p>Plywood (1D).</p> <p>fibre (1G).</p>
<p>114(a) This packing instruction applies to wetted solids.</p> <p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <ol style="list-style-type: none"> <li>For UN 0077, 0234, 0235 and 0236, packagings must be lead free.</li> <li>For UN 0342, inner packagings are not required when metal (1A2 or 1B2) or plastics (1H2) drums are used as outer packagings.</li> <li>Intermediate packagings are not required if leakproof removable head drums are used as the outer packaging.</li> </ol>	<p>Bags .....</p> <p>plastics .....</p> <p>textile .....</p> <p>woven plastics .....</p> <p>Receptacles .....</p> <p>metal .....</p> <p>plastics .....</p>	<p>Bags .....</p> <p>plastics .....</p> <p>textile, plastic coated or lined.</p> <p>Receptacles .....</p> <p>metal .....</p> <p>plastics .....</p>	<p>Boxes.</p> <p>steel (4A).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fibreboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>steel, removable head (1A2).</p> <p>aluminium, removable head (1B2).</p> <p>plywood (1D).</p> <p>fibre (1G).</p> <p>plastics, removable head (1H2).</p>
<p>114(b) This packing instruction applies to dry solids.</p>			

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <p>1. For UN 0077, 0132, 0234, 0235 and 0236, packagings must be lead free</p> <p>2. For UN 0160 and UN 0161, when metal drums (1A2 or 1B2) are used as the outer packaging, metal packagings must be so constructed that the risk of explosion, by reason of increased internal pressure from internal or external causes, is prevented</p> <p>3. For UN 0160, UN 0161, and UN 0508, inner packagings are not necessary if drums are used as the outer packaging</p> <p>4. For UN 0508 and UN 0509, metal packagings must not be used</p>	<p>Bags ..... paper, kraft plastics textile, sift-proof woven plastics, sift-proof.</p> <p>Receptacles ..... fiberboard metal paper plastics woven plastics, sift-proof.</p>	<p>Not necessary .....</p> <p>.....</p>	<p>Boxes. natural wood, ordinary (4C1). natural wood, sift-proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G).</p> <p>Drums. steel, removable head (1A2). aluminum, removable head (1B2). plywood (1D). fiber (1G). plastics, removable head (1H2).</p>
<p>115 ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <p>1. For liquid explosives, inner packagings must be surrounded with non-combustible absorbent cushioning material in sufficient quantity to absorb the entire liquid content. Metal receptacles should be cushioned from each other. The net mass of explosive per package may not exceed 30 kg when boxes are used as outer packaging. The net volume of explosive in each package other than boxes must not exceed 120 litres</p> <p>2. For UN 0075, 0143, 0495 and 0497 when boxes are used as the outer packaging, inner packagings must have taped screw cap closures and be not more than 5 litres capacity each. A composite packaging consisting of a plastic receptacle in a metal drum (6HA1) may be used in lieu of combination packagings. Liquid substances must not freeze at temperatures above –15 °C (+5 °F)</p> <p>3. For UN 0144, intermediate packagings are not necessary.</p>	<p>Receptacles metal plastics</p>	<p>Bags ..... plastics in metal receptacles. Drums ..... metal .....</p>	<p>Boxes. natural wood, ordinary (4C1). natural wood, sift-proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G).</p> <p>Drums. plastics, removable head (1H2). steel, removable head (1A2). aluminum, removable head (1B2). plywood (1D). fiber (1G). Specification MC–200 containers may be used for transport by motor vehicle.</p>
116 .....	Bags	Not necessary .....	Bags.



TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <ol style="list-style-type: none"> <li>For UN 0082, 0241, 0331 and 0332, inner packagings are not necessary if leakproof removable head drums are used as the outer packaging</li> <li>For UN 0082, 0241, 0331 and 0332, inner packagings are not required when the explosive is contained in a material impervious to liquid</li> <li>For UN 0081, inner packagings are not required when contained in rigid plastic which is impervious to nitric esters</li> <li>For UN 0331, inner packagings are not required when bags (5H2), (5H3) or (5H4) are used as outer packagings</li> <li>Bags (5H2 or 5H3) must be used only for UN 0082, 0241, 0331 and 0332</li> <li>For UN 0081, bags must not be used as outer packagings</li> </ol>	<p>paper, water and oil .. resistant ..... plastics ..... textile, plastic coat- ed or ..... lined ..... woven plastics, sift- proof ..... Receptacles ..... fibreboard, water resistant ..... metal ..... plastics ..... wood, sift-proof ..... Sheets ..... paper, water resist- ant ..... paper, waxed ..... plastics .....</p>	<p>.....</p>	<p>woven plastics (5H1/2/3). paper, multilwall, water resistant (5M2). plastics, film (5H4). textile, sift-proof (5L2). textile, water resist- ant (5L3). Boxes. steel (4A). aluminium (4B). wood, natural, ordi- nary (4C1). natural wood, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, remov- able head (1B2). Plywood (1D). fibre (1G). plastics, removable head (1H2). Jerricans. steel, removable head (3A2). plastics, removable head (3H2). IBCs. metal (11A), (11B), (11N), (21A), (21B), (21N), (31A), (31B), (31N). flexible (13H2), (13H3), (13H4), (13L2), (13L3), (13L4), (13M2). rigid plastics (11H1), (11H2), (21H1), (21H2), (31H1), (31H2). composite (11HZ1), (11HZ2), (21HZ1), (21HZ2), (31HZ1), (31HZ2).</p>
<p>117 ..... PARTICULAR PACKING REQUIREMENTS OR EX- CEPTIONS:</p> <ol style="list-style-type: none"> <li>This packing instruction may only be used for explosives of 0082 when they are mixtures of ammonium nitrate or other inorganic nitrates with other combustible substances which are not explosive ingredients. Such explosives must not contain nitroglycerin, similar liquid organic nitrates, liquid or solid nitrocarbons, or chlorates.</li> <li>This packing instruction may only be used for explosives of UN 0241 which consist of water as an essential ingredient and high proportions of ammonium nitrate or other oxidizers, some or all of which are in solution. The other constituents may include hydrocarbons or aluminium powder, but must not include nitro-derivatives such as trinitrotoluene.</li> <li>Metal IBCs must not be used for UN 0082 and 0241.</li> <li>Flexible IBCs may only be used for solids.</li> </ol>	<p>Not necessary ..... .....</p>	<p>Not necessary ..... .....</p>	<p>IBCs. metal (11A), (11B), (11N), (21A), (21B), (21N), (31A), (31B), (31N). flexible (13H2), (13H3), (13H4), (13L2), (13L3), (13L4), (13M2). rigid plastics (11H1), (11H2), (21H1), (21H2), (31H1), (31H2). composite (11HZ1), (11HZ2), (21HZ1), (21HZ2), (31HZ1), (31HZ2).</p>
<p>130 ..... Particular Packaging Requirements:</p>	<p>Not necessary ..... .....</p>	<p>Not necessary ..... .....</p>	

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
The following applies to UN 0006, 0009, 0010, 0015, 0016, 0018, 0019, 0034, 0035, 0038, 0039, 0048, 0056, 0137, 0138, 0168, 0169, 0171, 0181, 0182, 0183, 0186, 0221, 0238, 0243, 0244, 0245, 0246, 0254, 0280, 0281, 0286, 0287, 0297, 0299, 0300, 0301, 0303, 0321, 0328, 0329, 0344, 0345, 0346, 0347, 0362, 0363, 0370, 0412, 0424, 0425, 0434, 0435, 0436, 0437, 0438, 0451, 0459 and 0488. Large and robust explosives articles, normally intended for military use, without their means of initiation or with their means of initiation containing at least two effective protective features, may be carried unpackaged. When such articles have propelling charges or are self-propelled, their ignition systems must be protected against stimuli encountered during normal conditions of transport. A negative result in Test Series 4 on an unpackaged article indicates that the article can be considered for transport unpackaged. Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling devices.	.....	.....	Boxes. Steel (4A). Wood natural, ordinary (4C1). Plywood (4D). Reconstituted wood (4F). Fiberboard (4G). Plastics, expanded (4H1). Plastics, solid (4H2). Drums. Steel, removable head (1A2). Aluminum, removable head (1B2). Plywood (1D). Fiber (1G). Plastics, removable head (1H2). Large Packagings. Steel (50A). Aluminum (50B). Metal other than steel or aluminum (50N). Rigid plastics (50H). Natural wood (50C). Plywood (50D). Reconstituted wood (50F). Rigid fiberboard (50G).
131 ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. For UN 0029, 0267 and 0455, bags and reels may not be used as inner packagings 2. For UN 0030, 0255 and 0456, inner packagings are not required when detonators are packed in pasteboard tubes, or when their leg wires are wound on spools with the caps either placed inside the spool or securely taped to the wire on the spool, so as to restrict free moving of the caps and to protect them from impact forces 3. For UN 0360, 0361 and 0500, detonators are not required to be attached to the safety fuse, metal-clad mild detonating cord, detonating cord, or shock tube. Inner packagings are not required if the packing configuration restricts free moving of the caps and protects them from impact forces	Bags ..... ..... paper. plastics ..... Receptacles ..... fiberboard ..... metal ..... plastics ..... wood ..... Reels .....	Not necessary .....	Boxes. steel (4A). aluminum (4B). wood, natural, ordinary (4C1). natural wood, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). Drums. steel, removable head (1A2). aluminum, removable head (1B2). Plywood (1D). fiber (1G). plastics, removable head (1H2).
132(a) For articles consisting of closed metal, plastic or fiberboard casings that contain detonating explosives, or consisting of plastics-bonded detonating explosives.	Not necessary .....	Not necessary .....	Boxes. steel (4A). aluminum (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2).

**§ 173.62**

TABLE OF PACKING METHODS—Continued

[illegible]

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
135 .....	Bags ..... paper ..... plastics ..... Receptacles ..... fibreboard ..... metal ..... plastics ..... wood ..... Sheets ..... paper ..... plastics .....	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, expanded (4H1). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, removable head (1B2). Plywood (1D). fibre (1G). plastics, removable head (1H2).
136 .....	Bags ..... plastics ..... textile ..... Boxes. .... fibreboard ..... plastics ..... wood ..... Dividing partitions in the outer packagings .....	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, removable head (1B2). Plywood (1D). fibre (1G). plastics, removable head (1H2).
137 PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: For UN 0059, 0439, 0440 and 0441, when the shaped charges are packed singly, the conical cavity must face downwards and the package marked "THIS SIDE UP". When the shaped charges are packed in pairs, the conical cavities must face inwards to minimize the jetting effect in the event of accidental initiation.	Bags ..... plastics ..... Boxes ..... fibreboard ..... Tubes ..... fibreboard ..... metal ..... plastics ..... Dividing partitions in the outer packagings.	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G).
138 .....	Bags .....	Not necessary .....	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: If the ends of the articles are sealed, inner packagings are not necessary	plastics .....	.....	steel (4A). aluminium (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, solid (4H2). Drums. fibreboard (1G). plastics, removable head (1H2). steel, removable head (1A2). aluminium, removable head (1B2).
139 ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. For UN 0065, 0102, 0104, 0289 and 0290, the ends of the detonating cord must be sealed, for example, by a plug firmly fixed so that the explosive cannot escape. The ends of CORD DETONATING flexible must be fastened securely 2. For UN 0065 and UN 0289, inner packagings are not required when they are fastened securely in coils	Bags ..... plastics ..... Receptacles ..... fibreboard ..... metal ..... plastics ..... wood ..... Reels ..... Sheets ..... paper ..... plastics .....	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, removable head (1B2). plywood (1D). fibre (1G). plastics, removable head (1H2).
140 ..... PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. If the ends of UN 0105 are sealed, no inner packagings are required 2. For UN 0101, the packaging must be sift-proof except when the fuse is covered by a paper tube and both ends of the tube are covered with removable caps 3. For UN 0101, steel or aluminium boxes or drums must not be used	Bags ..... plastics ..... Reels ..... Sheets ..... paper, kraft ..... plastics .....	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibreboard (4G). plastics, solid (4H2). Drums. plastics, removable head (1H2). steel, removable head (1A2). aluminium, removable head (1B2). Plywood (1D). fibre (1G).

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
141 .....	Receptacles ..... fibregboard ..... metal ..... plastics ..... wood ..... Trays, fitted with di- viding partitions. plastics ..... wood ..... Dividing partitions in the outer pack- agings.	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordi- nary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibregboard (4G). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, remov- able head (1B2). Plywood (1D). fibre (1G). plastics, removable head (1H2).
142 .....	Bags ..... paper ..... plastics ..... Receptacles ..... fibregboard ..... metal ..... plastics ..... wood ..... Sheets ..... paper ..... Trays, fitted with di- viding partitions. plastics .....	Not necessary .....	Boxes. steel (4A). aluminium (4B). wood, natural, ordi- nary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibregboard (4G). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, remov- able head (1B2). Plywood (1D). fibre (1G). plastics, removable head (1H2).
143 ..... PARTICULAR PACKING REQUIREMENTS OR EX- CEPTIONS: 1. For UN 0271, 0272, 0415 and 0491 when metal packagings are used, metal packagings must be so constructed that the risk of explo- sion, by reason of increase in internal pressure from internal or external causes is prevented 2. Composite packagings (6HH2) (plastic recep- tacle with outer solid box) may be used in lieu of combination packagings	Bag ..... paper, kraft ..... plastics ..... textile ..... textile, rubberized .. Receptacles ..... fibregboard ..... metal ..... plastics ..... Trays, fitted with di- viding partitions. plastics ..... wood .....	Not necessary .....	Boxes. steel (4A). aluminum (4B). wood, natural, ordi- nary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fibregboard (4G). plastics, solid (4H2). Drums. steel, removable head (1A2). aluminium, remov- able head (1B2). plywood (1D). fibre (1G). plastics, removable head (1H2).

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
144 .....	Receptacles .....	Not necessary .....	Boxes. Drums. steel, removable head (1A2). aluminium, removable head (1B2). plastics, removable head (1H2). Plywood (1D). 2steel (4A). aluminum (4B). wood, natural, ordinary (4C1) with metal liner. plywood (4D) with metal liner. reconstituted wood (4F) with metal liner. plastics, expanded (4H1). plastics, solid (4H2).
PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: For UN 0248 and UN 0249, packagings must be protected against the ingress of water. When CONTRIVANCES, WATER ACTIVATED are transported unpackaged, they must be provided with at least two independent protective features which prevent the ingress of water	fibreboard ..... metal ..... plastics ..... Dividing partitions in the outer packagings.	.....	
US 1	<p>1. A jet perforating gun, charged, oil well may be transported under the following conditions:</p> <p>a. Initiation devices carried on the same motor vehicle or offshore supply vessel must be segregated; each kind from every other kind, and from any gun, tool or other supplies, unless approved in accordance with § 173.56. Segregated initiation devices must be carried in a container having individual pockets for each such device or in a fully enclosed steel container lined with a non-sparking material. No more than two segregated initiation devices per gun may be carried on the same motor vehicle.</p> <p>b. Each shaped charge affixed to the gun may not contain more than 112 g (4 ounces) of explosives.</p> <p>c. Each shaped charge if not completely enclosed in glass or metal, must be fully protected by a metal cover after installation in the gun.</p> <p>d. A jet perforating gun classed as 1.1D or 1.4D may be transported by highway by private or contract carriers engaged in oil well operations.</p> <p>(i) A motor vehicle transporting a gun must have specially built racks or carrying cases designed and constructed so that the gun is securely held in place during transportation and is not subject to damage by contact, one to the other or any other article or material carried in the vehicle; and</p> <p>(ii) The assembled gun packed on the vehicle may not extend beyond the body of the motor vehicle.</p> <p>e. A jet perforating gun classed as 1.4D may be transported by a private offshore supply vessel only when the gun is carried in a motor vehicle as specified in paragraph (d) of this packing method or on offshore well tool pallets provided that:</p> <p>(i) All the conditions specified in paragraphs (a), (b), and (c) of this packing method are met;</p> <p>(ii) The total explosive contents do not exceed 90.8 kg (200 pounds) per tool pallet;</p> <p>(iii) Each cargo vessel compartment may contain up to 90.8 kg (200 pounds) of explosive content if the segregation requirements in § 176.83(b) of this subchapter are met; and</p> <p>(iv) When more than one vehicle or tool pallet is stowed "on deck" a minimum horizontal separation of 3 m (9.8 feet) must be provided.</p>		

[Amdt. 173-260, 62 FR 24720, May 6, 1997; 62 FR 45702, Aug. 28, 1997; 62 FR 51560, Oct. 1, 1997; 63 FR 1884, Jan. 12, 1998; 63 FR 52849, Oct. 1, 1998; 64 FR 51918, Sept. 27, 1999; 65 FR 50461, Aug. 18, 2000; 65 FR 58629, Sept. 29, 2000; 65 FR 60383, Oct. 11, 2000; 66 FR 33429, 33430, June 21, 2001; 66 FR 45183, 45379, 45382, Aug. 28, 2001; 68 FR 45033, July 31, 2003; 68 FR 48569, Aug. 14, 2003; 68 FR 61941, Oct. 30, 2003; 73 FR 4717, Jan. 28, 2008; 74 FR 53188, Oct. 16, 2009; 75 FR 72, Jan. 4, 2010; 75 FR 5394, Feb. 2, 2010]

### § 173.63 Packaging exceptions.

(a) Cord, detonating (UN 0065), having an explosive content not exceeding 6.5 g (0.23 ounces) per 30 centimeter length (one linear foot) may be offered for transportation domestically and transported as Cord, detonating (UN 0289), Division 1.4 Compatibility Group D (1.4D) explosives, if the gross weight of all packages containing Cord, deto-

nating (UN 0065), does not exceed 45 kg (99 pounds) per:

- (1) Transport vehicle, freight container, or cargo-only aircraft;
- (2) Off-shore down-hole tool pallet carried on an off-shore supply vessel;
- (3) Cargo compartment of a cargo vessel; or